

Application Serial No. 09/889,666  
Amendment after final filed June 12, 2008  
Reply to final Office Action mailed April 7, 2008

**REMARKS**

Claims 5, 6, 7, 9, 11, 20 and 21 are pending in this application. Further reconsideration is requested based on the following remarks.

**Response to Arguments:**

The Applicants appreciate the consideration given to their arguments. The Applicants, however, are disappointed that their arguments were not found to be persuasive. The final Office Action asserts in section 10.1, at page 8, line 17 and 18, that:

Particularly Page 3, Lines 13-19 and Page 5, Lines 22-29 of the English translation of the International Application PCT/DE00/00075 do not describe cause-and-effect relationship. Rather, these lines describe "activities being permissible only after specific results" and "direct predecessors and direct successors given as connection criterion".

Page 3, lines 17, 18, and 19 of the International Application actually also describes the specific results as themselves in turn requiring other activities. In any case, since specific activities are permissible only after specific results, which themselves in turn required other activities, one of skill in the art would understand that an activity that *is required* by a result is substantially a cause of the result. Conversely, the result is an effect of the activity, and the International Application describes a cause-and-effect relationship between activities and results.

The final Office Action asserts in section 10.2, at page 10, lines 14, 15, and 16, in section 10.3, at page 11, lines 9, 10, and 11, in section 10.4, at page 12, lines 7, 8, and 9, and in section 10.5, at page 13, lines 5, 6, and 7, that:

The Examiner takes the position that the activity network claimed by the applicant has only predecessor-successor relationship and no cause-and-effect relationship, as explained in Paragraph 10.1 above.

Claim 21, to the contrary, recites "preparing first connections to connect the first event of the engineering activity to a set of second events of the engineering activity in a cause-and-effect relationship," rather than simply a predecessor-successor relationship. Valko neither teaches, discloses, nor suggests "preparing first connections to connect the first event of the engineering activity to a set of second events of the engineering activity in a cause-and-effect relationship," as recited in claim 21.

The final Office Action asserts in section 10.3, at page 11, lines 15-19, that:

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The Examiner directs the applicant to explain, if the third unit that follows the second unit that flows the first unit is the predecessor of the first unit, is there not a feedback loop from the third unit to the first unit. If it is not feedback loop, then when the third unit is the predecessor to the first unit, is it a feed forward.

Paragraphs [0006] and [0011] describe different aspects of the invention. Paragraph [0011], moreover, actually describes:

One embodiment relates to the units having a (predefined) orientation with respect to one another. In particular, the at least one third unit can be a (direct or indirect) predecessor or a (direct or indirect) successor of the first unit.

Thus, in one embodiment, at least one third unit can be a (direct or indirect) predecessor or a (direct or indirect) successor of the first unit, instead of, in addition to, or as an alternative to a feedback or feed-forward loop. Moreover, as shown in Fig. 4 and described at page 7, lines 21-28 of the International Application:

Then, the at least one third unit is determined from all the second units which are connected to the first unit (directly or indirectly), the at least one third unit having to fulfil in particular the predefined connection criterion (cf. block 402). The structural preparation takes place in a following step (cf. block 403).

Thus, in one embodiment, at least one third unit is determined from *all* the second units which are connected to the first unit (directly or indirectly), instead of, in addition to, or as an alternative to a feedback or feed-forward loop.

The final Office Action asserts finally in section 10.5, at page 13, that:

The Examiner takes the position that the resources feeding into the small circles send signals (in computer implementation, an interrupt or a polling has to occur, to verify the existence of the resources or results) to the activities 301 to 304, so they can start executing.

Since, as acknowledged graciously in the final Office Action, Valko only *verifies* the existence of the resources or results necessary for the activities 301 to 304 so they can start executing, Valko is not “preparing first connections to connect the first event of the engineering activity to a set of second events of the engineering activity in a cause-and-effect relationship,” as recited in claim 21. Further reconsideration is requested.

#### **Claim Rejections - 35 U.S.C. § 112:**

Claims 5, 6, 7, 9, 11, 20 and 21 were rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which is not described in the specification in such a way as to enable

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one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The rejection is traversed.

The final Office Action asserts in section 3, in the last full paragraph at page 2, that:

The specification does not describe anywhere connecting the first event of the engineering activity to a set of second events of the engineering activity in a cause-and-effect relationship. The cause-and-effect relationship between the activities is not described anywhere in the specification. Therefore, claim 21 has no support in the specification.

Fig. 1, to the contrary, indicates that a predecessor (activity 101) leads to a successor (result 102). In particular, connections are shown being prepared to connect a first event of an engineering activity 101 to a set of second events of the engineering activity 101. Moreover, as described at page 3, lines 2-12 of the English translation of the International Application PCT/DE00/00075 (hereinafter "the International Application"), a copy of which was filed originally with the application:

In particular, the units can represent activities and/or results of these activities. A connection of activities and results such that orientation occurs from which it is apparent, *inter alia*, that an activity leads to a result and this result, if appropriate, again permits another activity is particularly advantageous.

One of skill in the art would understand that an activity that *leads* to a result is substantially a cause of the result. Conversely, the result is an effect of the activity, and the International Application describes a cause-and-effect relationship between activities and results.

Moreover, as described further in the International Application at page 3, lines 8-12:

In this way, a flowchart of activities which bring about results is produced, the wide variety of activities being able to act on a single event, and an event being able to be a precondition for a multiplicity of activities.

Since activities which bring about results are represented on a flowchart, one of skill in the art would understand that an activity that *brings about* a result is substantially a cause of the result. Conversely, the result is an effect of the activity, and the International Application describes a cause-and-effect relationship between activities and results.

Furthermore, an event which is a *precondition* of an activity might be said to be a cause of the activities, while the activity might be said to be an effect of the event.

Moreover, as described further in the International Application at page 3, lines 13-19:

It is to be noted here that in a complex technical system an unwieldy "network-like" representation quickly results from the mutual dependencies between activities and results (specific activities usually being permissible only after specific results which themselves in turn required other activities).

Since specific activities are permissible only after specific results, which themselves in turn required other activities, one of skill in the art would understand that an activity that *is required* by a result is substantially a cause of the result. Conversely, the result is an effect of the activity, and the International Application describes a cause-and-effect relationship between activities and results.

Moreover, as described further in the International Application at page 5, lines 11-15:

If, for example, it is assumed that the units are embodied as activities and results, it is in particular interesting to determine which result directly follows which activity, and/or which results directly precede the activity.

Since the units, i.e. the events, are embodied as activities and results, and a result directly *follows* from an activity, one of skill in the art would understand that an activity is substantially a cause of the result. Conversely, the result is an effect of the activity, and the International Application describes a cause-and-effect relationship between activities and results.

Moreover, as shown in Fig. 3 and as described in the International Application at page 5, lines 11-15:

It is apparent that activities 301, 302, 303 and 304 follow the result 102, the activity 301 giving rise to a result 305, the activity 302 giving rise to a result 306, the activity 303 giving rise to a result 307 and the activity 304 giving rise to results 308, 309 and 310,

Since the activity 301 gives *rise* to the result 305, one of skill in the art would understand that the activity 301 is substantially a cause of the result 305. Conversely, the result 305 is an effect of the activity 301, and the International Application describes a cause-and-effect relationship between activities and results.

Explicit support for claim language, moreover, is not required. It is well-settled, rather, that the test for compliance with the *description* requirement is whether a person skilled in the art would reasonably conclude from the disclosure whose filing date is being relied on that the inventor had possession, as of the filing date, of the claimed invention. See, e.g., *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563, 19 U.S.P.Q. 2d 1111, 1116 (Fed.Cir. 1991) and cases discussed therein. How the disclosure accomplishes this fact is unimportant. *Id.* The lack of

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literal basis in the specification for a negative limitation may be not be sufficient to establish a *prima facie* case for lack of descriptive support. *Ex parte Parks*, 30 U.S.P.Q. 2d 1234, 1236 (Board of Patent Appeals and Interferences 1993).

Claims 5, 6, 7, 9, 11, 20 and 21 are thus submitted to meet the requirements of 35 U.S.C. § 112, first paragraph. Withdrawal of the rejection of claims 5, 6, 7, 9, 11, 20 and 21 is earnestly solicited.

#### **Claim Interpretations:**

The final Office Action asserts in section 4, in the last full paragraph at page 3, that:

Since the specification does not describe the cause-and-effect relationship, but describes the predecessor/successor relationship, the Examiner has interpreted the cause and-effect relationship to be same as the predecessor/successor relationship.

Fig. 1, to the contrary, indicates that a predecessor (activity 101) leads to a successor (result 102), which one of skill in the art would understand to be a "cause-and-effect relationship," as discussed above. Thus, the specification does describe a cause-and-effect relationship in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

#### **Claim Rejections - 35 U.S.C. § 102:**

Claims 5, 6, 7, 11 and 21 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,303,170 to Valko et al. (hereinafter "Valko"). The rejection is traversed. Reconsideration is earnestly solicited.

The fifth clause of claim 21 recites:

Preparing first connections to connect the first event of the engineering activity to a set of second events of the engineering activity in a cause-and-effect relationship.

Valko neither teaches, discloses, nor suggests "preparing first connections to connect the first event of the engineering activity to a set of second events of the engineering activity in a cause-and-effect relationship," as recited in claim 21. Valko, rather, is determining the availability of alternative resources required before an activity can *commence*, not causes for the activity. In particular, as described in the Abstract:

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For example, project/process simulation tool defines an activity; defines alternative resources required to commence the activity; determine availability of the alternative resources; and varies a duration of the activity based on the availability of the alternative resources.

Since Valko defines alternative resources required to commence an activity, Valko is not "preparing first connections to connect the first event of the engineering activity to a set of second events of the engineering activity in a cause-and-effect relationship," as recited in claim 21.

In Valko, moreover, successors to starting an activity are signaled when a set of prerequisites necessary to start an activity are present. Prerequisites are not causes. There is no cause-and-in effect relationship between the activity and the prerequisites to starting the activity, or between the successors to starting the activity and the activity. The activity, and the successors to starting the activity, rather, are going to start, they are just waiting to see when the prerequisites to starting the activity are present. In particular, as described in column 2, lines and 43-64:

According to a third aspect there is provided a tool for computer modeling an activity within a network of activities, comprising: first determination means for determining when a first set of M prerequisites to starting the activity are present, said first determination means including means for selecting the set of from a set of N signals from a plurality of connected activities within the network wherein M is less than N but greater than 1; first signalling means, coupled to said first determination means, for signalling successors to starting of the activity when the first set of prerequisites are present; wait means, coupled to said first signalling means, for waiting for a duration of the activity responsive to signalling of the successors starting of the activity; second determination means, coupled to said wait means, for after said waiting, determining when a second set of prerequisites to finishing the activity are present; and, second signalling means, coupled to said second determination means for signalling successors to finishing of the activity when it has been determined that the prerequisites to finishing the activity are present.

Since, in Valko, successors to starting an activity are signaled when a set of prerequisites necessary to start an activity are present, Valko is not "preparing first connections to connect the first event of the engineering activity to a set of second events of the engineering activity in a cause-and-effect relationship," as recited in claim 21.

In Valko, moreover, each activity may have one or more signal lines 202A-H connecting it to other activities in the network or to itself in a *feedback loop*. Feedback is gathered *after* the

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activity takes place, and is thus not causation. In particular, as described in column 3, lines 43, 44, and 45:

Each activity may have one or more signal lines 202A-H connecting it to other activities in the network or to itself in a feedback loop.

Since, in Valko, each activity may have one or more signal lines 202A-H connecting it to other activities in the network or to itself in a feedback loop, Valko is not "preparing first connections to connect the first event of the engineering activity to a set of second events of the engineering activity in a cause-and-effect relationship," as recited in claim 21.

In Valko, moreover, the model waits for signals from some number of *prerequisites* to start an activity. The activity is going to start, the model is just waiting to see when the prerequisites to starting the activity are present. In particular, as described in column 3, lines 43, 44, and 45:

In step 710 the model waits for signals from some number of prerequisites to start this activity, if any such prerequisites exist.

Since, in Valko, the model waits for signals from some number of prerequisites to start an activity, Valko is not "preparing first connections to connect the first event of the engineering activity to a set of second events of the engineering activity in a cause-and-effect relationship," as recited in claim 21.

The network shown in Fig. 1 of Valko, finally, is made up of a plurality of activities 102-112 selectively connected with one another by way of *signal* lines, not in a cause-and-effect relationship, contrary to the assertion in the final Office Action in section 6.1, at page 5. In particular, as described in column 2, lines 27-31:

An exemplary network of activities is illustrated in FIG. 1. The exemplary network is made up of a plurality of activities 102-112 selectively connected with one another by way of signal lines. A given activity can have a plurality of inputs and a plurality of outputs.

Since the network shown in Fig. 1 of Valko is made up of a plurality of activities 102-112 selectively connected with one another by way of signal lines, Valko is not "preparing first connections to connect the first event of the engineering activity to a set of second events of the engineering activity in a cause-and-effect relationship," as recited in claim 21. Claim 21 is submitted to be allowable. Withdrawal of the rejection of claim 21 is earnestly solicited.

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Claims 5, 6, 7, and 11 depend from claim 21 and add further distinguishing elements.

Claims 5, 6, 7, and 11 are thus also submitted to be allowable. Withdrawal of the rejection of claims 5, 6, 7, and 11 is also earnestly solicited.

**Claim Rejections – 35 U.S.C. § 103:**

Claims 9 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Valko in view of U.S. Patent No. 6,278,977 to Agrawal et al. (hereinafter "Agrawal").

Claims 9 and 20 depend from claim 21 and add further distinguishing elements. Valko neither teaches, discloses, nor suggests "preparing first connections to connect the first event of the engineering activity to a set of second events of the engineering activity in a cause-and-effect relationship," as discussed above with respect to the rejection of claim 21. Agrawal does not either, as acknowledged graciously in section 4.1, at page 3 of the final Office Action mailed May 24, 2007. Agrawal, rather, starts with a set of unrelated activities, and discovers the real world relationships between them at a *later* point in time. Thus, even if Valko and Agrawal were combined, as proposed in the final Office Action, the claimed invention would not result. Claims 9 and 20 are thus also submitted to be allowable. Withdrawal of the rejection of claims 9 and 20 is earnestly solicited.

**Conclusion:**

Accordingly, in view of the reasons given above, it is submitted that all of claims 5, 6, 7, 9, 11, 20 and 21 are allowable over the cited references. Allowance of all claims 5, 6, 7, 9, 11, 20 and 21 and of this entire application is therefore respectfully requested.

If there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

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If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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